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Maine Combined Sewer Overflow 2007 Status Report

Maine Department of Environmental Protection

Maine Bureau of Land and Water Quality

MAINE
COMBINED SEWER OVERFLOW
2007 STATUS REPORT

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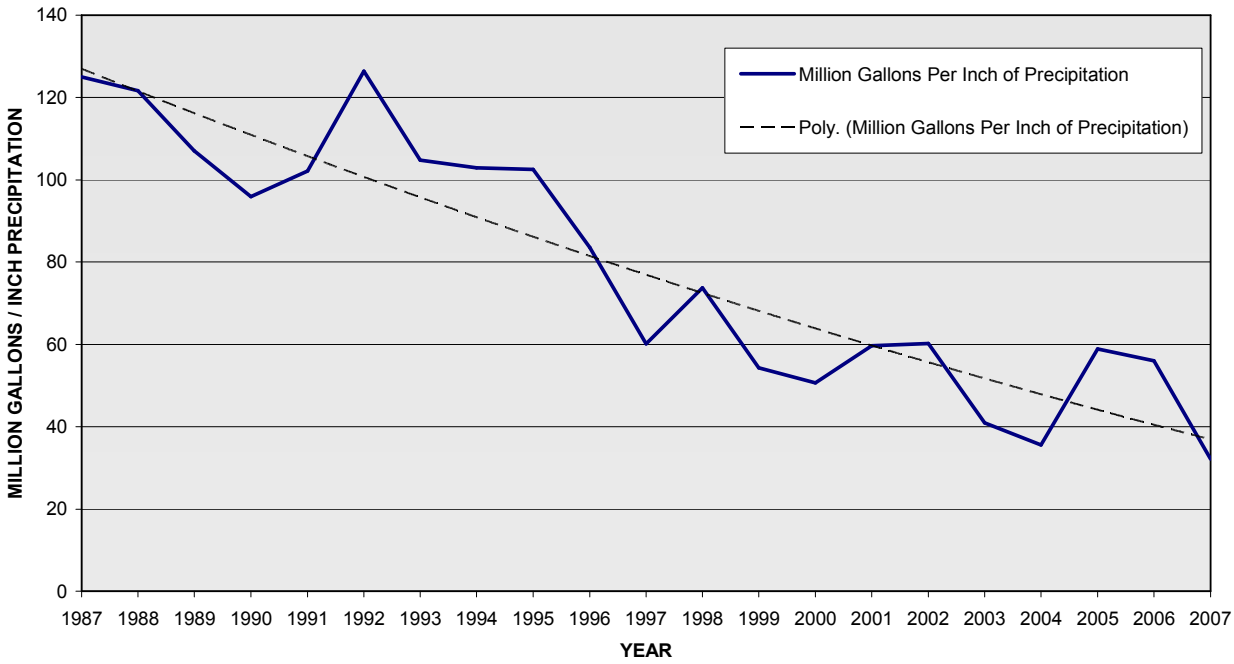
Department of Environmental Protection

MAINE
COMBINED SEWER OVERFLOWS
ANNUAL VOLUME DISCHARGED PER INCH OF PRECIPITATION



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INTRODUCTION

The purpose of this report is to inform the Combined Sewer Overflow (CSO) Communities and the general public on the status of the CSO program in Maine.

The information is compiled from various documents and reports submitted to the Maine Department of Environmental Protection by the CSO Communities (City/Town/District) or their consultants on their behalf. A majority of the information comes from the CSO Master Plans (a.k.a. Long Term Control Plans), Sewer System Evaluation Studies, Infiltration/Inflow Reports, Annual CSO Progress Reports, and general correspondence.

At the start of any CSO Community's abatement program, initial flow data was collected to estimate the existing discharge volumes and frequencies, define the problems, and establish a corrective course of action. This often occurred over a relatively short period of time (a year or two) and may not have captured as many good wet weather events as desired. However, this data was the best available information at the time and established the overflow baselines that are used within this report. Since then, CSO flow monitoring plans have continued to improve and overall data reliability has increased, giving the program better data for specific yearly wet weather patterns.

WHAT ARE CSOS?

- Combined Sewer Overflows (CSOs) are discharges of untreated wastewater from municipal sewerage systems that carry mixtures of sanitary sewage, storm water, and sometimes industrial wastes.
- They occur mostly during and after rain events or snowmelt. Flows within the combined sewer system during these wet weather events can be a high as fifty (50) times the normal dry weather flows.
- Large volumes of water entering the combined sewer system (CSS) through catch basins, old and leaky pipes, roof drains, cellar drains, sump pumps, and other sources cause the capacity of the system to be exceeded.
- Hydraulic relief points within the CSS allow the excess flows to be discharged. These relief points are generally near pump stations and river crossings.
- Excess volumes of combined sewage can also cause treatment facilities upsets, street flooding, and back-ups into basements.

WHAT ARE THE IMPACTS OF CSOs?

- Currently in Maine there are 35 communities with CSO discharge points in their sewerage systems (down from an original 60). These communities collectively have 183 individual CSO discharge points (down from an original 340).
- The frequency of discharges varies greatly from community to community, ranging from seldom to occurring in response to all but the smallest rain storms.
- In large communities hundreds of millions of gallons per year of untreated combined sanitary sewage and storm water may be discharged. Statewide, approximately 1.5 to 3 billion gallons are discharged annually from CSOs (down from an original 5.2 billion gallons).
- CSOs discharge untreated combined sewage to receiving waters that vary in size from the ocean and large rivers to small streams and drainage creeks.
- Water quality is impaired by the addition of floatables, bacteria, and sometimes industrial pollutants.
- Shellfishing areas and beaches can be closed and drinking water supplies threatened.

WHAT IS A CSO COMMUNITY?

- CSO Communities are permitted dischargers of combined sanitary and storm waters. The Department of Environmental Protection issues CSO permittees a wastewater discharge license that requires them to implement EPA's Nine Minimum Control Best Management Practices (BMPs), develop a Long Term Control Plan (LTCP) (a.k.a. Master Plan) to eliminate or abate their overflows, and finally to implement the plan and bring them into compliance with EPA's April 8, 1994 Combined Sewer Overflow (CSO) Control Policy.
- Special Conditions in their Maine Pollutant Discharge Elimination System (MEPDES) permit requires all CSO permittees to submit an Annual CSO Progress Report to the Department for the previous year by March 1st.
- The Progress Report documents the Community's efforts to comply with the Nine Minimum Controls, and collects pertinent fiscal and logistical information about their CSO abatement program. This information is used to track their CSO abatement progress and gather state-wide information on the CSO program and fiscal needs.

WHERE DID WE START?

- The CSO movement started in 1989 with the clarification of the Clean Water Act through the publication of the National CSO Control Strategy by the Environmental Protection Agency (EPA).
- At that time the State had about 60 CSO Communities that discharged an estimated 5.2 billion gallons of combined wastewater and storm water during wet weather events.
- Statewide it was estimated that overflow events happened approximately 1,600 times a year through approximately 340 different CSO outfalls.
- On April 19, 1994 EPA issued a national policy statement entitled "Combined Sewer Overflow (CSO) Control Policy." This policy provides guidance to permittees with CSOs, State permit and water quality standards authorities on coordinating the planning, selection, and implementation of CSO controls that meet the requirements of the Clean Water Act (CWA).
- In February 2000, the Maine Department of Environmental Protection Chapter 570 Rules, entitled "Combined Sewer Overflow Abatement," became effective. This chapter establishes procedures for CSO evaluation, preparation of an abatement plan, and sets forth minimum controls to reduce CSOs while long-range plans are being completed.

WHAT IS BEING DONE TO ABATE CSO DISCHARGES?

- All of Maine's CSO Communities have completed or are working on comprehensive CSO studies or facilities plans. These plans are often referred to as Master Plans (MPs) or Long Term Control Plans (LTCPs). These documents define the magnitude of the CSO discharges, their impacts on the environment, and evaluate a range of abatement control alternatives.
- Abatement projects have reduced untreated discharges in all of the CSO Communities. A number of communities have eliminated their CSO discharges and are no longer licensed to discharge untreated combined sewage during wet weather.
- Statewide, CSO Communities report that they have invested a total of $304 million ($23 million in 2007) in CSO abatement and expect to spend over $130 million in the next five years. After that the expected needs to bring them into compliance with the CSO Control Policy is an additional $60 to 80 million.

WHERE ARE WE NOW? – 2007 STATUS

- Maine started 2007 with 37 CSO Communities and finished the year with 35. Two of these communities, Dover-Foxcroft and East Millinocket, completed their CSO abatement programs and were not re-licensed as CSO Communities in 2007. A complete listing of Maine's CSO Communities, their number of CSO outfalls and the outfall receiving waters is on page 8.
- The volume of combined sewage discharged statewide in 2007 was reported at 1.53 billion gallons. The table on page 9, Maine CSO Community Flow Data, contains a historic listing of the yearly overflows from each CSO Community. The 2007 CSO Flow Comparison pie chart on page 16 and the 2007 CSO Flow Comparison By Community bar chart on page 17 are graphical comparisons of the overflow volumes between the CSO Communities.
- In 2007, the CSO Communities reported 568 overflow events, the fewest yet reported. This total is arrived at by summing the number of days that each CSO Community experienced an overflow event. An overflow event is any day in which one or more CSOs discharge. The table on page 10, Maine CSO Community Annual Number of CSO Discharge Events, contains a historic listing of the annual number of CSO discharge events for each CSO Community.
- Thirty-one (31) of the CSO Communities reported experiencing at least one combined sewer overflow discharge in 2007, while four (4) reported no overflows.
- In 2007, nineteen (19) of the communities reported discharging less in 2007 than in 2006, thirteen (13) reported discharging more, while three (3) reported no change. The maximum number of days that overflow events were reported from a single community was 70. The average (mean) number of discharge events for all of the communities was 16 and the median was 5. Additional information is given in the table on page 10.
- The volume and frequency of CSO discharges varies from one wet weather event to another based on existing groundwater conditions, frozen or thawed ground, snowmelt, and rainfall volume, duration, and intensity. To evaluate abatement progress we look for an overall trend in reduction, versus trends from year to year. The chart on page 11, Combined Sewer Overflow Volume Discharged, illustrates an overall downward trend in the CSO volumes being discharged annually. Since 1989, the volume of combined sewage discharged has decreased by approximately 60 - 70%. This is stated as a range because of the correlation of overflow volumes to variations in annual weather patterns.
- Similarly, the chart on page 12, Combined Sewer Overflow Annual Number of Discharge Events, shows a downward trend in the number of overflow days per year. Since 1989, the number of overflow days has decreased by approximately 55 - 65%, once again stated as a range.

- In 2007 Maine CSO Communities reduced the number of CSO discharge locations by 10, down from 193 to 183. Reductions were in: Auburn (1), Brewer (1), Gardiner (1), Lewiston (1), Rockland (1), and the removal of Dover-Foxcroft (4) and East Millinocket (1) from the CSO Program. The chart on page 13, Maine – Statewide Number of Combined Sewer Overflow Outfalls, shows a 46% reduction in the number of CSO outfalls since 1989.
- Trying to compare CSO abatement progress from year to year is difficult because of the number of conditions that influence the volume and frequency of overflows, not the least of which is yearly precipitation patterns. To somewhat compensate for the fluctuation in yearly precipitation patterns, the total volume of combined sewage discharged has been unitized by taking into consideration the annual precipitation. The chart on page 14, CSO Annual Volume Discharged Per Inch of Precipitation, illustrates this and shows a continual downward trend in the volume of combined sewage discharged per inch of annual precipitation. Since 1989, overflow volumes have decreased from approximately 120 million gallons per inch of precipitation to 30 - 50 million gallons per inch of precipitation, 32 million in 2007. Although this type of analysis is rough, it is a good indicator of the CSO abatement progress that is being made.
- The average annual precipitation for Maine's CSO Communities is approximately 45 inches. In 2007, the annual precipitation for the CSO Communities was near or slightly above the average at 47 inches. The Yearly CSO Volumes and Precipitation chart on page 15 shows a comparison between annual CSO volumes and yearly precipitation. The graph shows that CSO volumes tend to follow the yearly ups and downs in precipitation levels. However, what is interesting to note is the widening gap between the precipitation amount and the volume of combined sewage discharged. This widening gap clearly indicates that the CSO abatement is being accomplished and that overflow volumes are becoming less influenced by precipitation events.
- 2007 was a closer to average precipitation year (47"), especially when compared to the exceptionally wet year the CSO Communities experienced in 2006 at approximately 57 inches. As a result of CSO abatement efforts and a dryer year, statewide CSOs decreased by 52%, from 3.21 to 1.53 billion gallons in 2007.
- The CSOs from the City of Portland and Portland Water District in Portland comprised approximately 40% of the State's total overflow volume in 2007, see the CSO Flow Comparison Pie Chart on page 16. Given the large impact that Portland's data has on the State's total, it might be prudent to look at the rest of the state without utilizing Portland's data. After removing Portland's overflow data from the state total, the overflow volume for the remaining CSO communities decreased by 32% from 2006 to 2007, 1.39 to 0.94 billion gallons respectively.

- Abatement of CSOs is a costly endeavor. To date Maine CSO Communities have reported expending $304 million implementing their CSO abatement projects. In the 2007 Annual CSO Progress Report they reported expending $23 million on abatement work in 2007. It is estimated that the future needs of these communities to complete their CSO abatement plans is in excess of $180 million, in 2007 dollars.
- CSO abatement progress can not be measured solely by comparing the volumes discharged from one year to the next. The reason is that the volume discharged is influenced by variations in precipitation amount, intensity and timing, the rate of snow melt, frozen or thawed ground, and existing groundwater levels. Even given the same annual precipitation, no two years would result in the same volume of CSO discharges.
- The relationship between the annual precipitation and the annual volume of combined sewage discharged is not linear. As a general rule, as precipitation levels increase, the volume of combined sewage discharged also increases per inch of precipitation. Simply put, once the capacity of the combined sewer system is reached, any additional rainfall or snowmelt overflows the already inundated system.
- Different wet weather conditions and precipitation patterns also affect individual CSO Communities differently. This is due mostly to the make up of the sewer system, the number of catch basins connected, the area of impermeable surface, and the specific hydraulic restriction(s) causing the overflows, to name just a few. The overflows in some communities are more susceptible or responsive to intense summer storms, while in other communities it might be high ground water. Direct comparisons between various communities should not be made.
- It is well established that CSOs can and do have impacts on beach and shellfish closures. Stating that a specific CSO event or series of events is responsible for a specific closure is more difficult and will not be attempted in this report. In some areas there are a number of other factors that might enter into a beach or shellfishing area being closed. These are, but not necessarily limited to, urban storm water runoff, malfunctioning septic systems, domestic and no domestic animal waste, agricultural runoff, and bathers, to name just a few. What is assessed in the Annual Reports is which beach and shellfishing areas may be impacted by the CSOs, were there any of these areas closed, and is it likely that the closures were caused in whole or in part by CSOs?

  In 2007, six (6) CSO Communities listed ten (10) beach areas that may be impacted by their CSO discharges. They were: Bar Harbor (Town Beach & Hulls Cove); Biddeford (Hills Beach, Biddeford Pool & Camp Ellis); Cape Elizabeth (Casino Beach & Fort Williams Park); Portland (East End Beach); Skowhegan (Two Rivers Campground); and South Portland (Willard Beach). Of these, three (3) beaches were listed as having an advisory or closure in 2007 (Biddeford Pool, East End & Willard Beach), one (1) of which (East End Beach) was listed as being caused in whole or in part by CSO activity.

In 2007, six (6) CSO Communities listed shellfishing areas that were closed in their area (Bar Harbor, Biddeford, Calais, Machias, Portland & South Portland). Three (3) of these communities (Bar Harbor, Machias and Portland) reported that the closures were caused in whole or in part by CSO activity.

MAINE – COMBINED SEWER OVERFLOW (CSO) COMMUNITY LIST

(AS OF DECEMBER 31, 2007)

	COMMUNITY	CSOs	Number of CSOs & Receiving Water
1.	**AUBURN SD**	4	3-Androscoggin Rv., 1-Little Androscoggin Rv.
2.	AUGUSTA SD	23	4-Bond Bk., 1-Kennedy Bk., 17-Kennebec Rv., 1-Whitney Bk.
3.	BANGOR	11	7-Kenduskeag Str., 4-Penobscot Rv.
4.	BAR HARBOR (Main Plant)	3	3-Frenchman's Bay
5.	BAR HARBOR (Hulls Cove)	1	1-Frenchman's Bay
6.	BATH	4	4-Kennebec Rv.
7.	BELFAST	2	2-Passagassawakeag River/Belfast Harbor
8.	BIDDEFORD	11	10-Saco Rv., 1-Thatcher Bk.
9.	BREWER	6	5-Penobscot River, 1-Sedgeunkendunk Str.
10.	BUCKSPORT	2	2-Penobscot Rv.
11.	CALAIS	5	4-St. Croix Rv., 1-Landing Brook
12.	CAPE ELIZABETH – Ottawa Road PS	1	1-Atlantic Ocean
13.	**FAIRFIELD**	2	2-Kennebec Rv.
14.	GARDINER	1	1-Kennebec Rv.
15.	**HALLOWELL WD**	1	1-Kennebec Rv.
16.	**HAMDEN**	1	1-Souadabscook Str.
17.	KENNEBEC STD	3	3-Kennebec Rv.
18.	**LEWISTON**	23	10-Androscogin Rv., 1-Gully Bk., 2-Hart Bk., 10-Jepson Bk.
19.	LEWISTON-AUBURN WPCA	1	1-Androscogin Rv.
20.	MACHIAS	2	2-Machias Rv.
21.	MADAWASKA	2	2-St. John Rv.
22.	MECHANIC FALLS SD	1	1-Little Androscoggin Rv.
23.	**MILFORD**	1	1-Penobscot Rv.
24.	MILO WD	3	1-Pleasant Rv., 2-Sebec Rv.
25.	OLD TOWN	3	2-Penobscot Rv., 1-Stillwater Rv.
26.	ORONO	1	1-Penobscot Rv.
27.	PARIS UD	1	1-Little Androscoggin Rv.
28.	**PORTLAND – CITY**	12	6-Back Cove, 3-Capisic Bk., 2-Portland Harbor., 1-Marsh
29.	PORTLAND – PWD	21	9-Back Cove, 3-Casco Bay, 7-Fore Rv., 2- Portland Harbor
30.	**RANDOLPH**	1	1-Kennebec Rv.
31.	ROCKLAND	2	2-Rockland Harbor
32.	SACO	5	1-Bear Bk., 4-Saco Rv.
33.	SANFORD SD	2	2-Mousam Rv.
34.	SKOWHEGAN	9	9-Kennebec Rv.
35.	SOUTH PORTLAND	5	1-Barberry Ck., 1-Fore Rv., 1-Long Ck., 2-Portland Hbr.,
36.	WESTBROOK	5	5-Presumpscot Rv.
37.	**WINSLOW**	1	1-Sebasticook Rv.
38.	WINTERPORT SD	1	1-Penobscot Rv.
	TOTAL CSOs	183	

37 CSO Permits, permitting 34 of 35 CSO Towns/Cities

Two or more permits in one CSO Town/City

Bold = 9 communities with sewer systems only. Sewers discharge to a POTW controlled by another entity.

MAINE CSO COMMUNITY FLOW DATA

No longer a CSO Community

Annual Volumes (Gallons)

Community	NPDES Permit No.	Year 1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Auburn S.D.	ME0100005	99,720,000	99,720,000	99,720,000	99,720,000	99,720,000	99,720,000	99,720,000	99,720,000	99,720,000	99,720,000	99,720,000	99,720,000	78,340,742	102,297,387	199,674,605	66,307,631	19,197,928	4,687,316	37,155,818	28,936,137	23,622,547
Augusta S.D.	ME0100013	72,554,000	72,554,000	72,554,000	72,554,000	72,554,000	72,554,000	72,554,000	72,554,000	72,554,000	72,554,000	1,053,717	3,411,410	72,554,222	5,615,140	2,705,324	2,191,067	7,089,337	3,881,421	26,553,055	14,539,424	10,000,000
Bangor	ME0100781	635,000,000	635,000,000	635,000,000	525,000,000	533,000,000	386,000,000	384,000,000	403,000,000	416,000,000	344,000,000	317,730,000	329,000,000	285,910,000	230,190,000	88,430,000	161,000,000	204,000,000	193,870,000	303,160,000	272,750,000	150,580,000
Bar Harbor	ME0101214 & ME0102466	32,000,000	32,000,000	32,000,000	32,000,000	32,000,000	32,000,000	32,000,000	31,900,000	14,700,000	14,700,000	13,160,915	1,919,628	17,627,806	4,730,155	384,531	2,729,389	2,845,621	290,133	13,661,958	5,102,820	8,719,436
Bath	ME0100021	51,000,000	51,000,000	51,000,000	51,000,000	51,000,000	51,000,000	51,000,000	52,600,000	37,000,000	37,000,000	37,000,000	37,000,000	37,000,000	5,910,364	6,173,760	4,341,921	16,496,467	6,055,666	60,338,026	36,105,688	20,783,335
Belfast	ME0101532	736,000	736,000	736,000	736,000	736,000	736,000	736,000	736,000	736,000	736,000	736,000	736,620	617,517	617,517	46,000	0	0	0	1,796,747	485,451	1,035,392
Biddeford	ME0100048	400,000,000	400,000,000	400,000,000	400,000,000	400,000,000	400,000,000	400,000,000	400,000,000	400,000,000	400,000,000	160,000,000	286,924,366	191,155,589	234,987,578	145,356,657	415,694,234	136,417,937	101,087,776	301,372,131	163,423,532	150,304,402
Brewer	ME0100072	750,000,000	750,000,000	750,000,000	750,000,000	750,000,000	750,000,000	725,000,000	725,000,000	725,000,000	725,000,000	725,000,000	210,670,800	423,644,459	322,168,651	243,176,051	417,536,641	509,412,078	279,830,419	592,984,187	247,538,580	231,283,607
Bucksport	ME0100111	53,000,000	53,000,000	53,000,000	53,000,000	53,000,000	53,000,000	53,000,000	53,000,000	53,000,000	53,000,000	53,000,000	53,000,000	53,000,000	53,000,000	53,000,000	53,000,000	53,000,000	371,970	16,623,000	5,546,501	20,000
Calais	ME0100129	26,280,000	26,280,000	26,280,000	26,280,000	26,280,000	26,280,000	26,280,000	26,280,000	26,280,000	26,280,000	26,280,000	26,280,000	26,280,000	26,280,000	26,280,000	26,280,000	26,280,000	5,290,000	42,140,000	20,409,850	22,060,520
Cape Elizabeth (PWD)		750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	739,000	100,000	0	630,000	1,325,000	4,807,000	5,365,000	3,254,000
Corinna S.D.	ME0100153	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	20,000	22,000	27,000	31,000	25,000	2,000	2,000	0			
Dover-Foxcroft	ME0100501	16,000	16,000	16,000	16,000	16,000	4,000	16,000	12,000	2,000	8,000	0	6,000	0	2,000	0	0	0	0	199,000	0	
East Millinocket	ME0100196	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	0	0	0	0	0	0	0	0	
Fairfield	ME0102393	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	301,461	221,954	221,954	221,954	221,954	65,296	0	0	0	0	0
Fort Kent U.D.	ME0102369	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	0	2,200	0	0	2,400	41,000	600,000		
Gardiner	ME0101702	44,000,000	44,000,000	44,000,000	44,000,000	44,000,000	44,000,000	44,000,000	44,000,000	44,000,000	44,000,000	44,000,000	43,948,000	7,843,400	8,278,600	6,487,000	11,528,900	13,149,700	5,113,000	46,616,000	10,269,400	2,487,000
Hallowell W.D.	ME0101010	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	150,000	200,000	300,000	150,000	0	0	100,000	0	700,000	150,000	150,000
Hampden	ME0102512	1,201,000	39,600	389,000	797,500	282,875	265,834	1,703,766	493,399	528,980	1,716,002	106,355	113,282	1,474,767	1,218,000	0	0	262,900	0	43,862,280	0	85,000
Kennebec S.T.D.	ME0100854	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	436,994	399,843	3,088,240	3,043,421	421,162	0	858,175	341,948	2,438,706	385,734	1,136,649
Kittery	ME0100285	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	150,000	100,000	0	50,000	50,000	0	0	33,900	0		
Lewiston	ME0100994	208,900,000	208,900,000	208,900,000	208,900,000	208,900,000	208,900,000	208,900,000	208,900,000	208,900,000	208,900,000	94,105,000	142,000,000	215,300,000	136,898,295	61,370,660	176,395,415	199,236,985	82,766,343	249,891,633	159,807,018	90,983,189
Lewiston-Auburn W.P.C.A.	ME0101478	232,500,000	232,500,000	232,500,000	232,500,000	232,500,000	232,500,000	232,500,000	232,500,000	232,500,000	232,500,000	232,500,000	232,500,000	232,500,000	107,968,000	135,764,000	111,036,000	113,088,000	83,045,000	480,025,000	265,521,000	142,286,000
Lincoln S.D.	ME0101796	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	1,216,350	86,982	2,411,050	349,276	1,057,000							
Lisbon	ME0100307	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	850,000	300,000	83,000	0	0	0			
Livermore Falls	ME0100315											0	0	0	0	0						
Machias	ME0100323	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	963,052	1,184,000	690,000	0	722,293	2,533,245	2,124,118	6,646,222	3,008,025	2,263,720
Madawaska	ME 0101681	2,400,000	2,400,000	2,400,000	2,400,000	3,200,000	3,200,000	2,014,000	3,094,500	3,242,000	2,400,000	2,404,640	457,409	0	610,000	11,398	3,892	100,000	1,749,764	8,215,460	3,700,002	2,667,765
Mechanic Falls S.D.	ME0100391	18,000,000	18,000,000	18,000,000	18,000,000	18,000,000	18,000,000	18,000,000	18,000,000	18,000,000	18,000,000	3,544,743	11,098,872	17,997,322		3,923,998	1,001,489	2,389,769	963,114	11,765,409	9,419,000	11,853,000
Milford	ME0102695	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	0	211,070	0
Milo W.D.	ME0100439	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	1,000	0	0	2,000	0	10,000	0	501,000
Oakland																						
Old Town	ME0100471	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	0	1,597,324	6,296,537	425,832	4,779,340	321,105	770,699
Orono	ME0100498	31,000,000	31,000,000	25,500,000	20,800,000	19,100,000	8,600,000	31,600,000	8,900,000	11,100,000	22,200,000	19,600	6,956,500	5,234,000	2,603,000	0	494,000	1,179,000	0	18,467,330	1,314,000	7,360,000
Paris U.D.	ME 0100951	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	0	17,900	0	300,000	0	0	175,000	0	288,000	173,500	206,000
Portland & PWD	City-ME0101435 / PWD-ME0102075	1,800,000,000	1,800,000,000	1,800,000,000	1,800,000,000	1,800,000,000	1,800,000,000	1,800,000,000	1,800,000,000	1,800,000,000	1,800,000,000	457,505,000	1,788,201,000	740,737,000	993,511,000	807,157,162	1,245,153,000	454,680,000	607,351,945	1,296,000,000	1,816,525,856	589,203,712
Presque Isle	ME0100561	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000	4,390,000	27,487,000	10,194,000	7,234,000	113,000						
Randolph	ME0102423	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	2,122,156	9,878,793	196,591	432,500	0	1,058,039	266,256	459,476
Rockland	ME0100595	47,000,000	47,000,000	47,000,000	47,000,000	47,000,000	47,000,000	47,000,000	47,000,000	47,000,000	47,000,000	47,000,000	47,370,142	20,000,000	20,000,000	20,000,000	20,000,000	20,000,000	7,000,000	0	0	0
Saco	ME 0101117	32,000,000	32,000,000	32,000,000	32,000,000	32,000,000	32,000,000	32,000,000	32,000,000	32,000,000	32,000,000	30,255,737	31,558,200	19,608,006	19,264,777	17,720,027	4,316,465	5,758,842	10,313,025	176,214,902	38,451,182	1,950,000
Sanford S.D.	ME0100617	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	2,458,950	2,470,950	55,000	0	0	0	0	0	15,000	0
Skowhegan	ME0100625	24,000,000	24,000,000	24,000,000	24,000,000	24,000,000	24,000,000	24,000,000	24,000,000	24,000,000	24,000,000	10,917,612	23,930,371	23,930,371	4,110,833	12,315,897	10,883,416	22,768,111	12,082,768	47,873,323	31,314,358	21,596,631
S. Maine Tech. College																			11,147			
South Portland	ME0100633	500,000,000	500,000,000	450,000,000	400,000,000	350,000,000	300,000,000	250,000,000	200,000,000	183,000,000	183,000,000	31,046,134	182,646,264	50,000,000	17,535,575	49,503,494	4,467,429	7,896,125	19,812,914	26,810,104	26,118,706	15,727,553
Unity	ME0101150																					
Westbrook	ME0100846	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	38,407,000	49,090,000	21,391,000	1,229,000	2,187,000	271,000	7,000	944,000	11,119,000	40,636,729	15,879,000
Winslow	ME0102628	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	900,000	500,000	200,000	0	0	0	0	0	23,652	0	725,000
Winterport S.D.	ME0100749	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	70,500	144,000	570,000	91,000	677,800	0	102,000
Yarmouth	ME0100765	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	0	500	500	200	200	0					
Total		5,206,384,000	5,205,222,600	5,150,072,000	4,985,780,500	4,942,365,875	4,734,836,834	4,681,100,766	4,628,766,899	4,594,339,980	4,532,607,352	2,452,803,890	3,659,197,113	2,575,105,121	2,318,342,803	1,892,851,173	2,737,579,393	1,827,077,657	1,431,120,519	3,834,873,122	3,207,810,924	1,530,056,633
Total In Billion Gallons		5.21	5.21	5.15	4.99	4.94	4.73	4.68	4.63	4.59	4.53	2.45	3.66	2.58	2.32	1.89	2.74	1.83	1.43	3.83	3.21	1.53
Minus Portland																	1,492,426,393	1,372,397,657	823,768,574	2,538,873,122	1,391,285,068	940,852,921

Numbers in blue are estimated from LTCP/MP or other source.

MAINE CSO COMMUNITY ANNUAL NUMBER OF CSO DISCHARGE EVENTS

Annual Number of CSO Discharge Events

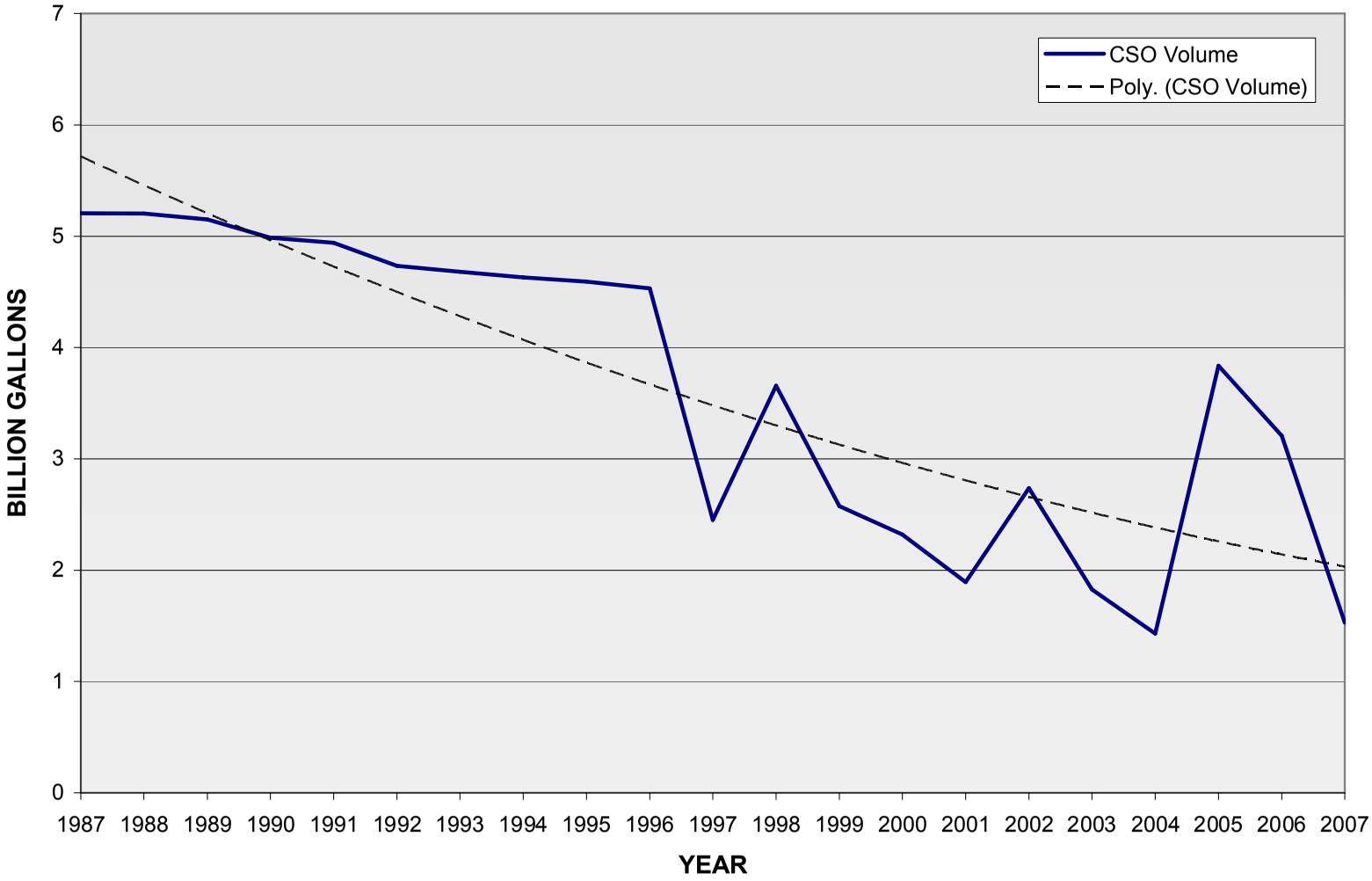
No longer a CSO Community

Year

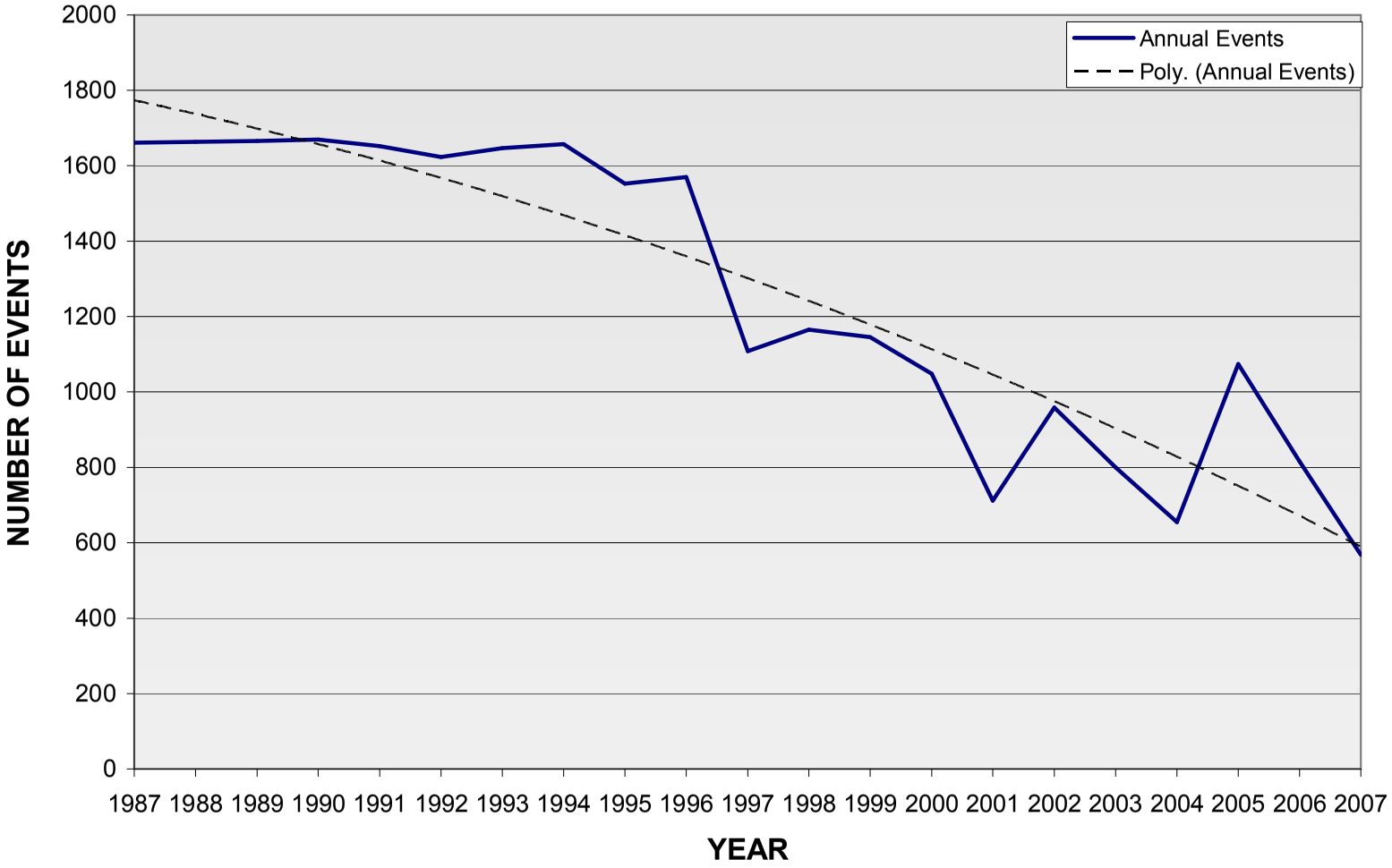
Community	NPDES Permit No.	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Auburn S.D.	ME0100005	80	80	80	80	80	80	21	21	10	10	7	7	7	7	44	67	62	24	58	37	42
Augusta S.D.	ME0100013	80	80	80	80	80	80	80	80	80	80	39	79	59	73	25	58	70	58	73	50	29
Bangor	ME0100781	53	53	53	53	52	37	46	49	49	41	38	44	33	37	20	40	49	42	46	58	25
Bar Harbor	ME0101214 & ME0102466	155	155	155	155	155	155	155	155	155	155	154	47	98	44	7	21	16	5	22	18	10
Bath	ME0100021	64	64	64	64	64	64	64	64	64	64	64	30	37	21	10	25	23	20	33	32	25
Belfast	ME0101532	7	7	7	7	7	7	7	7	7	7	7	5	7		1	0	0	0	5	3	5
Biddeford	ME0100048	180	180	180	180	180	180	180	180	180	180	94	147	162	184	140	150	93	61	104	82	70
Brewer	ME0100072	95	95	95	95	95	95	66	66	66	66	22	92	95	80	53	72	66	72	78	45	38
Bucksport	ME0100111	53	53	53	53	53	53	53	53	53	53	53	10	17	10	32	24	25	8	24	18	2
Calais	ME0100129	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	9	15	5	8
Cape Elizabeth (PWD)		5	5	5	5	5	5	5	5	5	5	2	3	5	5	3	0	2	5	20	20	5
Corinna S.D.	ME0100153	30	30	30	30	30	30	30	30	30	30	15	16	26	23	19	1	1	0			
Dover-Foxcroft	ME0100501	8	8	8	8	8	2	8	6	1	4	0	3	0	1	0	0	0	0	2	0	
East Millinocket	ME0100196	11	11	11	11	11	11	11	11	11	11	11	11	0	0	0	0	0	0	0	0	
Fairfield	ME0102393	15	15	15	15	15	15	15	15	15	15	4	4	4	4	4	4	0	0	0	0	0
Fort Kent U.D.	ME0102369	10	10	10	10	10	10	10	10	10	10			0	2	0	0	2	1	4		
Gardiner	ME0101702	20	20	20	20	20	20	20	20	20	20	5	19	11	13	9	13	24	11	41	14	2
Hallowell W.D.	ME0101010	6	6	6	6	6	6	6	6	6	6	3	4	6	3	0	0	2	0	14	3	3
Hampden	ME0102512	1	3	8	10	7	4	17	18	8	14	8	1	11	9	0	0	2	0	13	0	1
Kennebec S.T.D.	ME0100854	15	15	15	15	15	15	15	15	15	15	15	8	6	6	4	0	5	7	9	3	1
Kittery	ME0100285	7	7	7	7	7	7	7	7	7	7	3	2	0	1	1	0	0	1	0		
Lewiston	ME0100994	80	80	80	80	80	80	80	80	80	80	46	71	62	70	43	57	55	65	69	70	38
Lewiston-Auburn W.P.C.A.	ME0101478	80	80	80	80	80	80	80	80	80	80	80	80	80	41	28	25	23	35	49	44	29
Lincoln S.D.	ME0101796	10	10	10	10	10	10	10	10	10	5	1	3	11	2							
Lisbon	ME0100307	5	5	5	5	5	5	5	5	5	5	5	5	1	1	1	0	0	0			
Livermore Falls	ME0100315											0	0									
Machias	ME0100323	8	8	8	8	5	7	3	9	3	3	3	2	9	5	0	4	16	8	15	10	5
Madawaska	ME 0101681	16	16	16	16	16	16	91	91	27	26	16	12	0	3	1	1	7	4	65	14	17
Mechanic Falls S.D.	ME0100391	25	25	25	25	25	25	25	25	25	25	24	25	18		10	15	20	12	29	23	9
Milford	ME0102695	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	0	8	0
Milo W.D.	ME0100439	3	3	3	3	3	3	3	3	3	3	3	3	3	1	0	0	1	0	1	0	2
Oakland																						
Old Town	ME0100471	25	25	25	25	25	25	25	25	25	25	25	3	5	4	0	5	7	1	13	1	4
Orono	ME0100498	30	30	28	29	19	12	25	27	18	37	3	7	12	4	0	1	2	0	12	3	6
Paris U.D.	ME 0100951	5	5	5	5	5	5	5	5	5	5	0	1	0	1	0	0	1	0	2	2	2
Portland & PWD	City-ME0101435 / PWD-ME0102075	100	100	100	100	100	100	100	100	100	100	61	102	81	83	58	141	71	86	88	93	58
Presque Isle	ME0100561	26	26	26	26	26	26	26	26	26	26	17	26	12	14	4						
Randolph	ME0102423	23	23	23	23	23	23	23	23	23	23	23	23	23	23	19	3	2	0	8	3	1
Rockland	ME0100595	23	23	23	23	23	23	23	23	23	23	12	23	18	8	5	11	6	2	0	0	0
Saco	ME 0101117	40	40	40	40	40	40	40	40	40	44	36	33	39	44	22	36	22	32	41	24	12
Sanford S.D.	ME0100617	10	10	10	10	10	10	10	10	10	10	10	10	3	1	0	0	0	0	0	1	0
Skowhegan	ME0100625	150	150	150	150	150	150	150	150	150	150	108	111	111	161	95	115	77	53	81	81	55
S. Maine Tech. College																			1			
South Portland	ME0100633	23	23	23	23	23	23	23	23	23	23	21	23	23	15	12	11	10	10	20	20	5
Unity	ME0101150																					
Westbrook (PWD)	ME0100846	34	34	34	34	34	34	34	34	34	34	34	30	19	16	15	33	7	13	17	31	55
Winslow	ME0102628	20	20	20	20	20	20	20	20	20	20	10	10	1	0	0	0	0	0	1	0	3
Winterport S.D.	ME0100749	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	8	1	2	0	1
Yarmouth	ME0100765	4	4	4	4	4	4	4	4	4	4	0	4	4	2	1	0					
Total		1661	1663	1666	1669	1652	1623	1647	1657	1552	1570	1108	1165	1145	1048	712	959	800	655	1074	816	568
Median		20	20	20	20	20	20	21	21	20	20	12	10	11	8	4.5	4	7	5	15	12	5
Mean		37	37	37	37	37	36	37	37	34	35	25	26	25	24	16	22	19	15	27	21	16

Numbers in blue are estimated from LTCP/MP or other source.

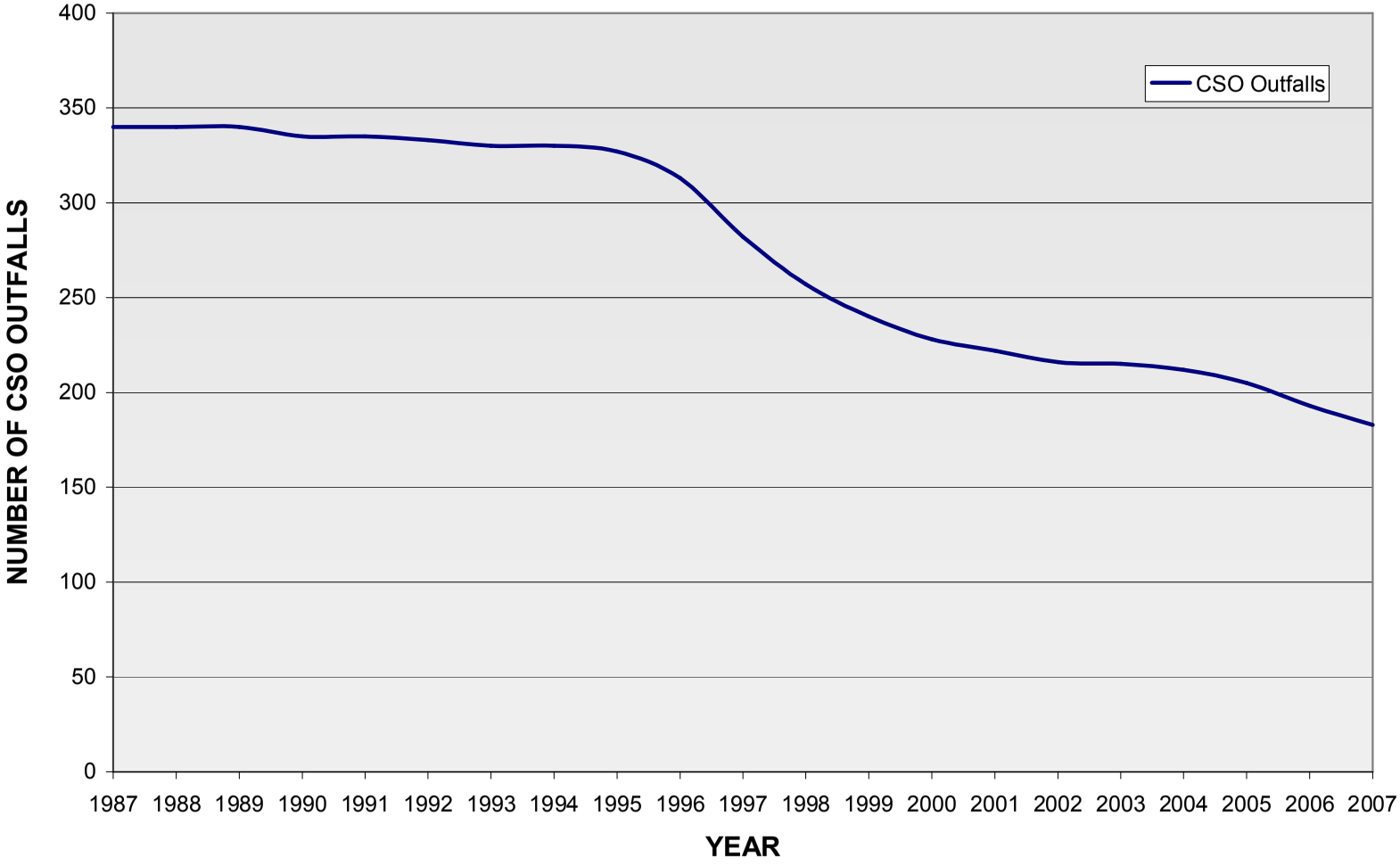
MAINE - STATEWIDE
COMBINED SEWER OVERFLOW (CSO)
VOLUME DISCHARGED



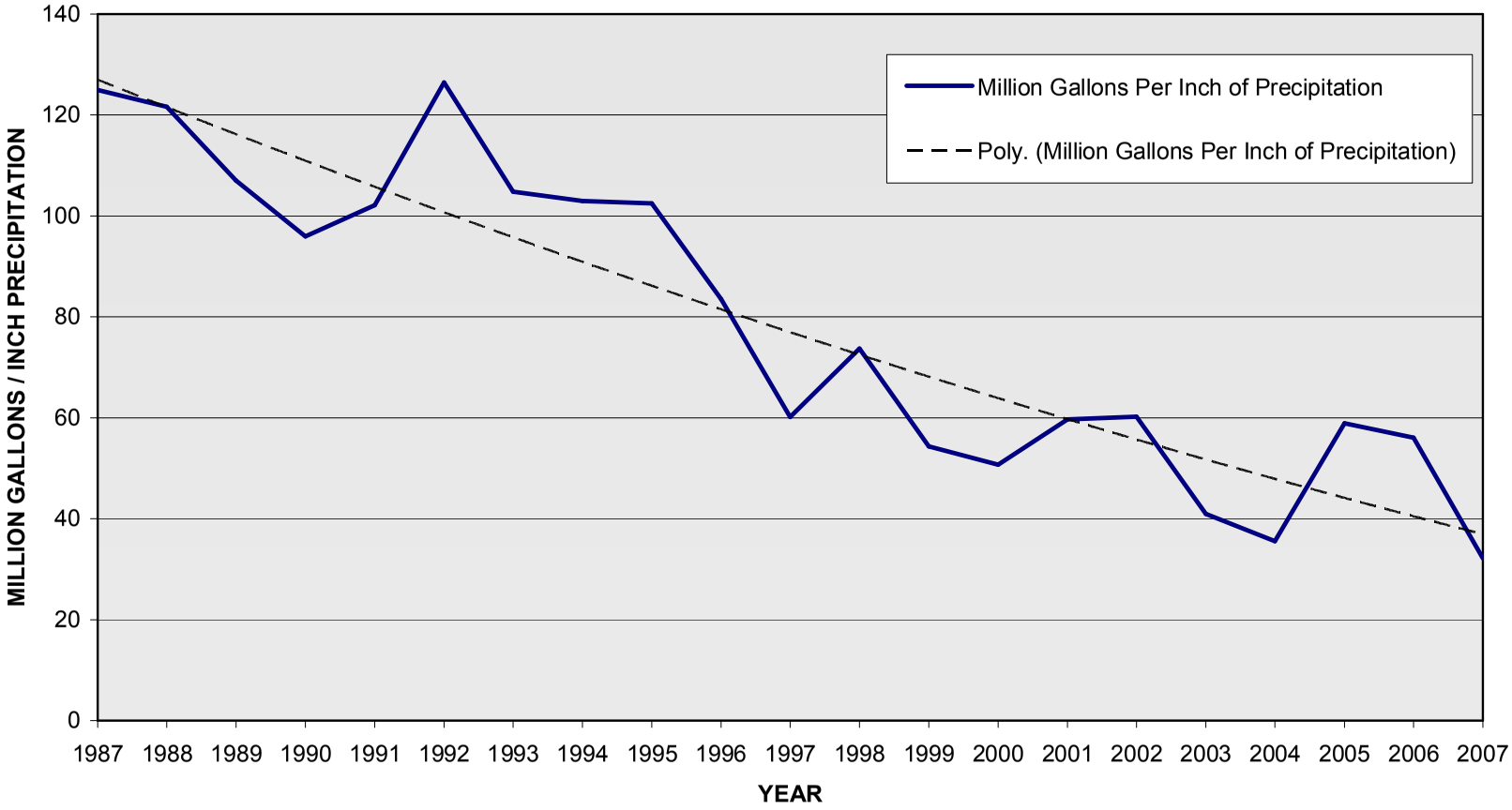
MAINE - STATEWIDE
COMBINED SEWER OVERFLOW (CSO)
ANNUAL NUMBER OF DISCHARGE EVENTS

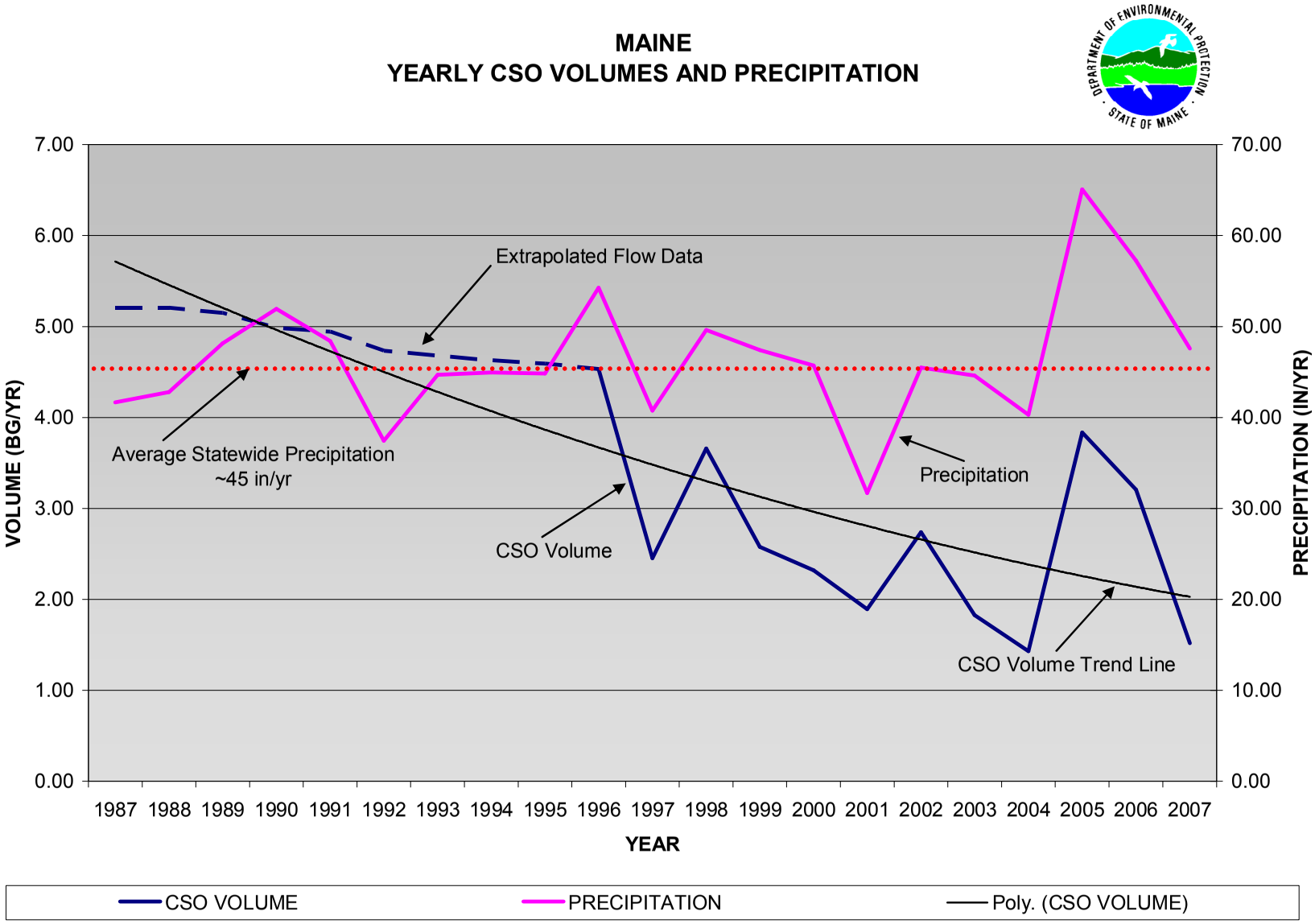


MAINE - STATEWIDE
NUMBER OF
COMBINED SEWER OVERFLOW (CSO)
OUTFALLS

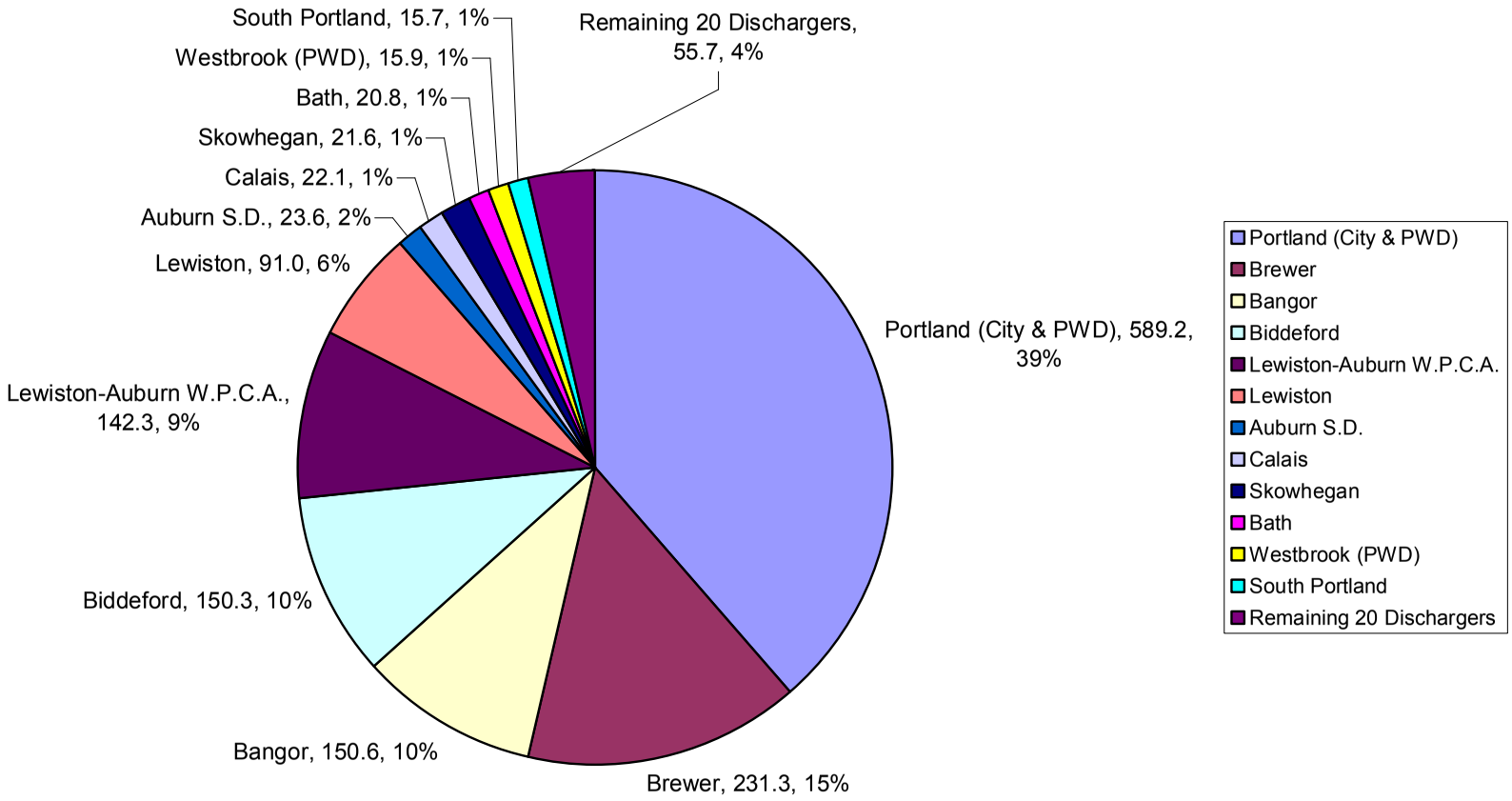


MAINE
COMBINED SEWER OVERFLOWS
ANNUAL VOLUME DISCHARGED PER INCH OF PRECIPITATION




MAINE
YEARLY CSO VOLUMES AND PRECIPITATION
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE OF MAINE
VOLUME (BG/YR)
PRECIPITATION (IN/YR)
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007
YEAR
Extrapolated Flow Data
Average Statewide Precipitation
~45 in/yr
CSO Volume
Precipitation
CSO Volume Trend Line
CSO VOLUME
PRECIPITATION
Poly. (CSO VOLUME)

2007 CSO FLOW COMPARISON
35 CSO COMMUNITIES
32 DISCHARGERS - 1.53 BILLION GALLONS



Discharger, Overflow in Million Gallons (MG), Percent of Total

2007 CSO FLOW COMPARISION BY COMMUNITY